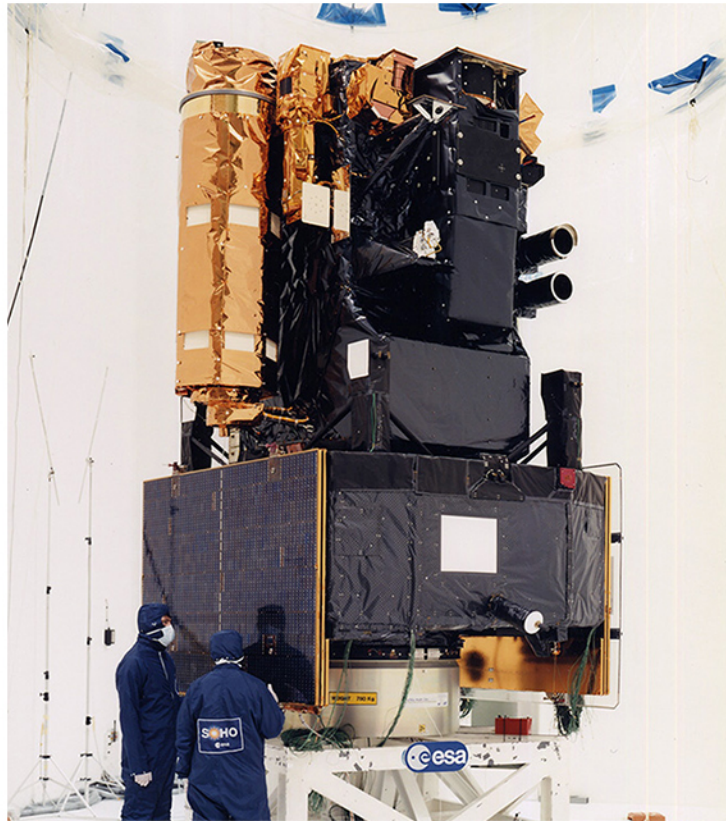


Solar and Heliospheric Observatory



SOHO, the Solar and Heliospheric Observatory, is a project of international cooperation between ESA and NASA to study the Sun, from its deep core to the outer corona, and the solar wind.

Together with two other ESA missions, Cluster and Ulysses, SOHO is studying the Sun-Earth interaction from different perspectives.

SOHO was launched by NASA on an Atlas II-AS rocket (AC-121) from the Cape Canaveral Air Station (Florida, United States) on December 2, 1995. The SOHO spacecraft was built in Europe by an industry team led by prime contractor Matra Marconi Space (now EADS Astrium) under overall management by ESA.

SOHO has provided an unprecedented breadth and depth of information about the Sun, from its interior, through the hot and dynamic atmosphere, to the solar wind and its interaction with the interstellar medium. These findings have been documented in an impressive, still growing body of scientific and popular literature.

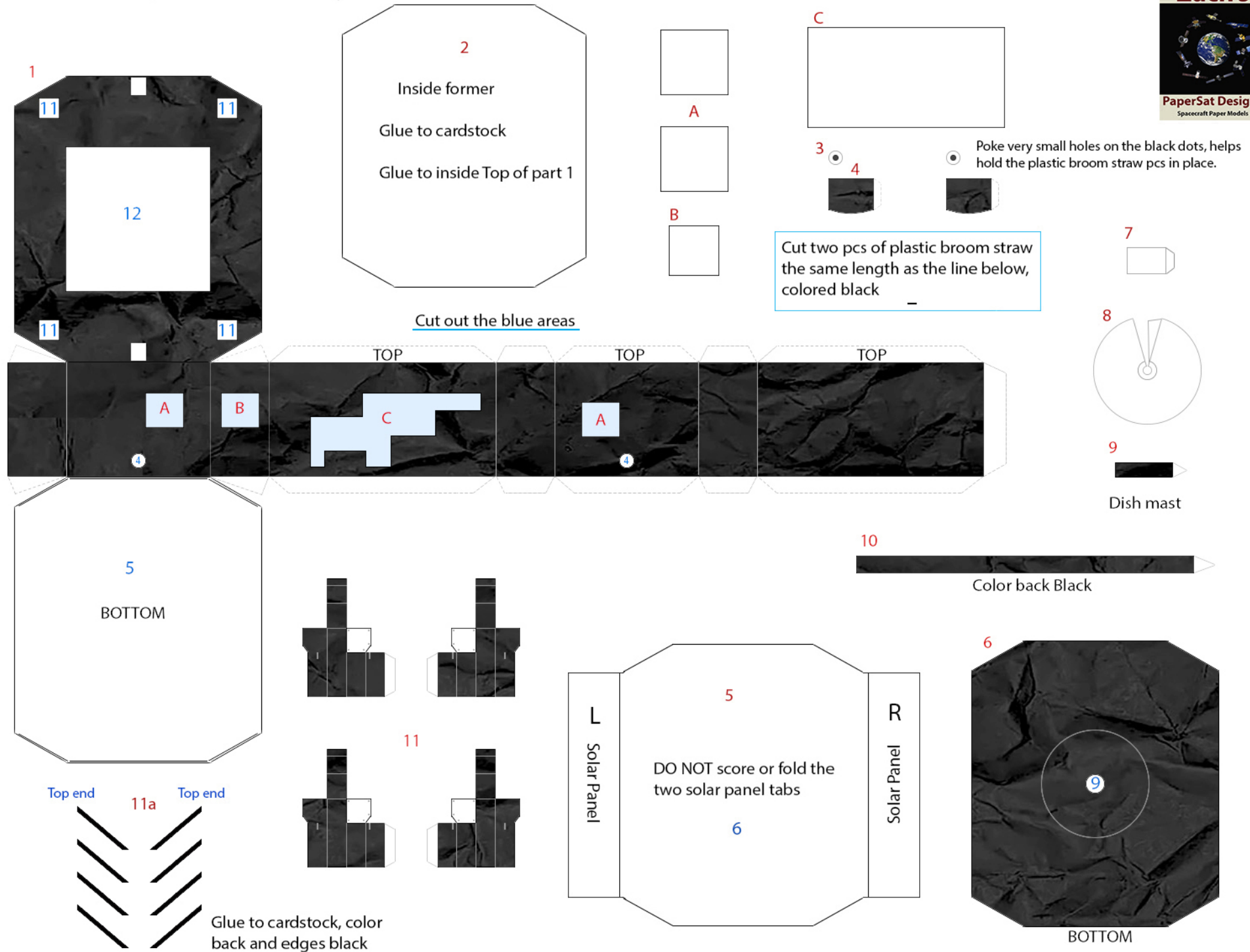
Some of the key results include:

- Revealing the first images ever of a star's convection zone (its turbulent outer shell) and of the structure of sunspots below the surface.
- Providing the most detailed and precise measurements of the temperature structure, the interior rotation, and gas flows in the solar interior.
- Measuring the acceleration of the slow and fast solar wind.
- Identifying the source regions and acceleration mechanism of the fast solar wind in the magnetically "open" regions at the Sun's poles.
- Discovering new dynamic solar phenomena such as coronal waves and solar tornadoes.
- Revolutionising our ability to forecast space weather, by giving up to three days notice of Earth-directed disturbances, and playing a lead role in the early warning system for space weather.
- Monitoring the total solar irradiance (the 'solar constant') as well as variations in the extreme ultra violet flux, both of which are important to understand the impact of solar variability on Earth's climate.

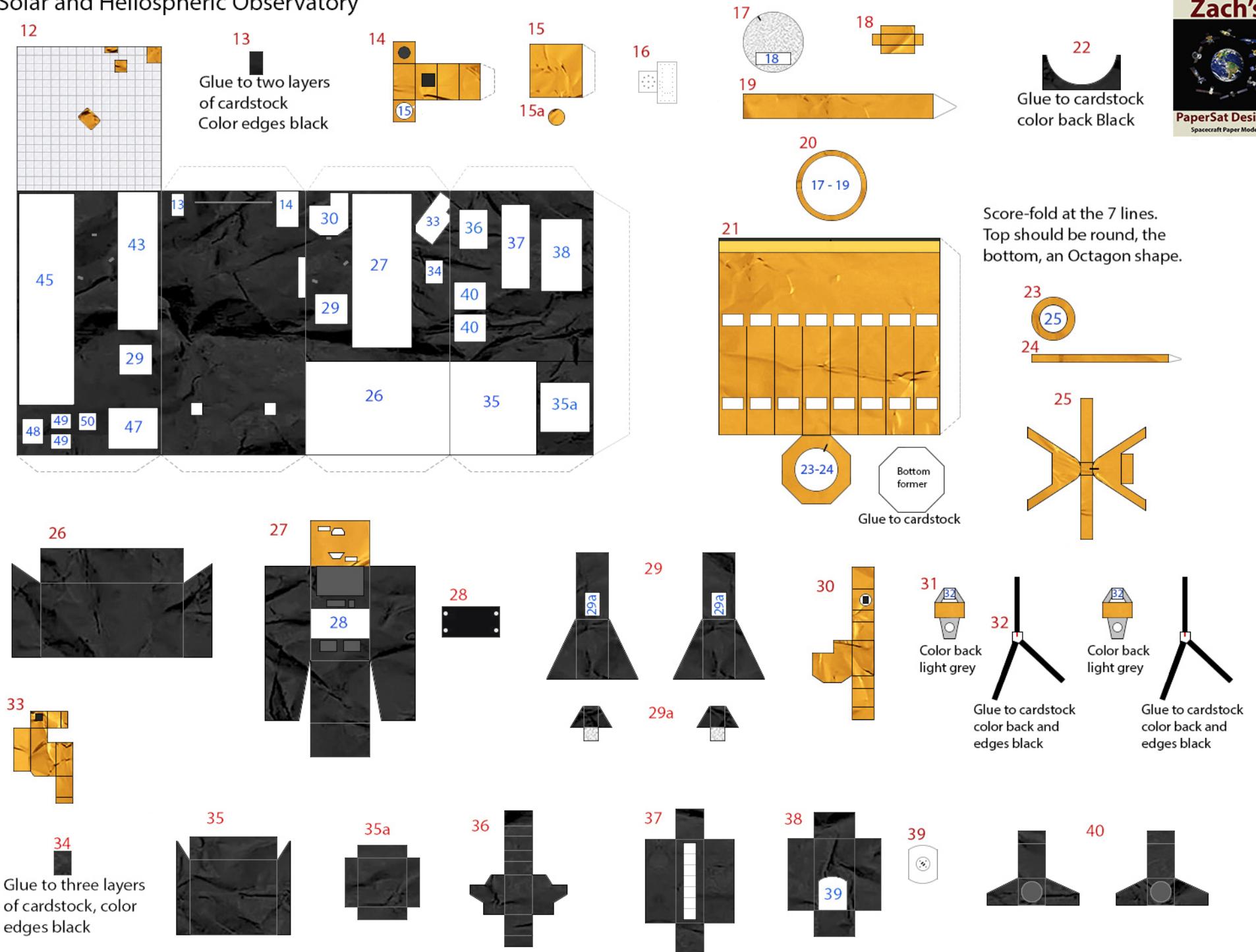
Besides watching the Sun, SOHO has become the most prolific discoverer of comets in astronomical history. As a consequence of its observing the Sun, SOHO (specifically the LASCO instrument) has inadvertently allowed the discovery of comets by blocking out the Sun's glare. Approximately one-half of all known comets have been spotted by SOHO. SOHO had discovered over 2700 comets by April 2014, with an average discovery rate of one every 2.59 days. In September 2015, SOHO discovered its 3000th comet.

SOHO continues to operate after over 25 years in space; the mission has been extended until the end of 2020 with a likely extension until 2022.

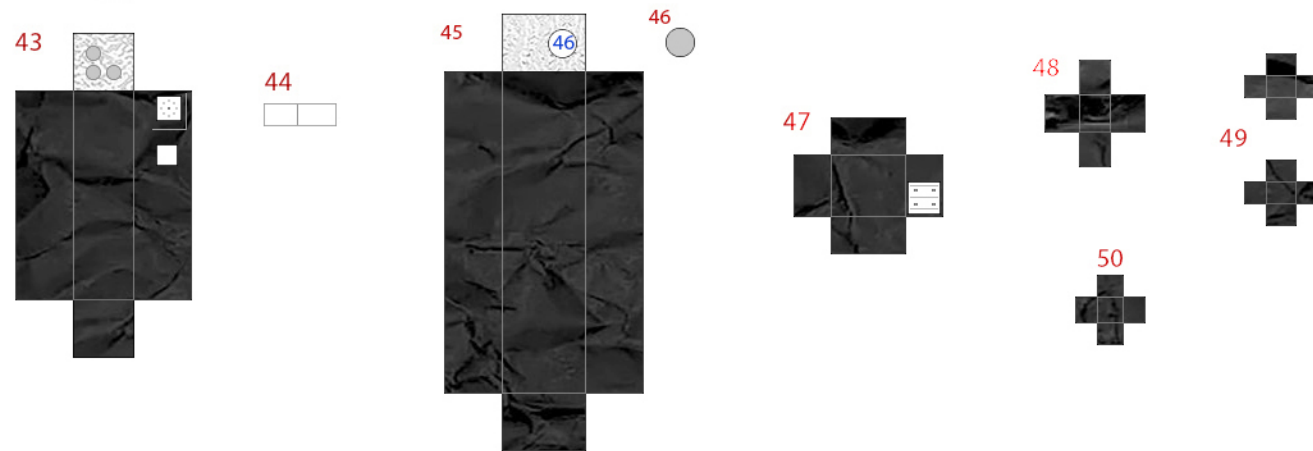
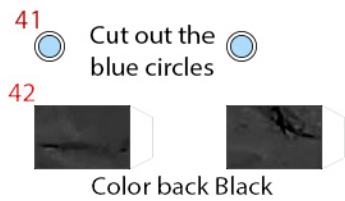
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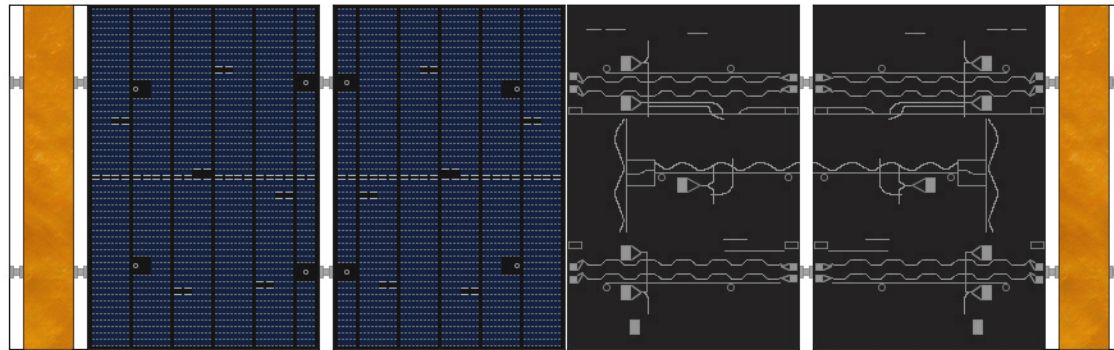
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LEFT



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